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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,609	11/20/2003	Donald Scott Johnson	130936-1	3109

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GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A.59  
NISKAYUNA, NY 12309

EXAMINER
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TRUONG, DUC

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/719,609	<b>Applicant(s)</b> JOHNSON ET AL	
	<b>Examiner</b> Duc Truong	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
     4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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### DETAILED ACTION

Claims 21-30 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 17, 2005.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to adequately teach how to make and/or use the invention and how to achieve the equation related to the minimum weight average MW. At least claim 1 is rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotter et al or GB 1264900 or Keitoku et al or Savariar et al, they are of record on 1449. Cotter discloses a composition comprising a polyaryl ether containing recurring units of the formula: -O-E-O-E'- wherein E' is the residium of 4,4'-dichlorodiphenyl sulfone, and

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E is selected from the group of tetramethylbisphenol A, admixed with up to 50 mole% of a second diphenol such as biphenol; and from specific mixtures of (a)-(e) (see col. 2, line 60 onto col. 3, line 8) or (a)-(f) (see col. 3, lines 48-66).

GB 1264900 discloses at least in Example 2, a 50:50 blend of bisphenol A and p-p'-bisphenol was reacted with 4,4'-dichlorodiphenyl sulfone to have the repeating unit (see page 3, Example 2).

Keitoku reference discloses aromatic poly ether sulfone was synthesized from combinations of tetramethylbiphenyl-4,4'-diol and hexamethylbiphenyl-4,4'-diol, and 4,4'-dichlorodiphenyl sulfone and 4,4'-difluorobenzophenone by nucleophilic aromatic substitution polycondensation (see Synopsis) in that bisphenol A has been disclosed on page 317, left hand col. And bi-phenyl unit has been disclosed on the same page, right hand col.) and the steps of the process has been disclosed on page 318, left hand col. In the Experimental, in the Scheme and in Table I.

The Savariar reference discloses that poly(biphenyl ether sulfone) are prepared by contacting equimolar amounts of 4,4'-biphenol, with one or more other bis hydroxyl aromatic compounds such as 4,4'-dihydroxydiphenyl sulfone, bisphenol A, and dihalodiarylsulfones such as 4,4'-dichlorodiphenyl sulfone or 4,4'-difluorodiphenyl sulfone----, in the cited conditions (see col. 4, lines 39-end; col. 2, line 30 et seq.).

The disclosures of the references differ from the instant claims in that they do not disclose the claimed characteristics such as min. wt average MW nor notched Izod impact strength value nor specific additional diphenolic monomer nor glass transition temperature nor chain terminating agent.

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However, the references do disclose the required reactants under cited conditions to form the same or similar products. Therefore, it would have been obvious to one of ordinary skill in the art to select reactants from the references within the limitations of the instant claims to form the claimed products having the claimed characteristics since they have been shown to be effective in a similar system and thus would have been expected to provide adequate results. There is no showing of unexpected results derived from said selections.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over references as stated above, in view of Fukuyama, they are of record on 1449.

The references disclose the polyaryl ether sulfone composition, as stated above.

The disclosures of the references differ from the instant claims in that they do not disclose the claimed additional diphenolic monomer, as in claim 6.

The Fukuyama reference discloses that polyethersulfones are prepared by ring-opening of a macrocyclic spirobiindane polyethersulfone oligomer composition.

The Fukuyama reference provides evidence that the additional monomer containing spiroindane unit is well known in the art in the polyarylether sulfone composition.

It would have been obvious to one of ordinary skill in the art to select the spiroindane unit from the Fukuyama reference to replace said additional unit from the references in order to gain the advantages of the combination of the references: that being polyether sulfones which have the added properties such as toughness, chemical inertness, and thermal and oxidative stability (see col. 1, lines 10-14).

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The replacement of said additional monomer by the use of a monomer containing a spiroindane moiety in the polyarylether sulfone composition having the added properties would not provide unexpected results to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Truong whose telephone number is 571-272-1081. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DUCTRUONG  
PRIMARY EXAMINER